Disposition of Compressed Gas Cylinders

Quality Assurance Plan

Prepared for:

UT-Battelle

Prepared by:

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Disposition of Compressed Gas Cylinders

Integrated Environmental Services, Inc. (IES) is committed to providing the manpower and equipment required to complete the scope of work defined for the Basic Ordering Agreement as it pertains to the disposition of compressed gas cylinders. Respect for, and understanding of the chemical and radiological hazards is of up-most importance for the completion of this project in a manner that protects both the human and natural environment.

IES is committed to protecting that environment by instituting the following measures which assures work quality:

This commitment is supported by the following facts:

1. IES has chosen to implement and maintain a quality assurance system that complies with the requirements of the American Standards Institute (ANSI) and the American Society of Mechanical Engineers (ASME) as delineated in ANSI/ASME NQA-1.

2. All IES personnel receive the DOE and OSHA required training. Beyond that training, each technician is trained not only how to do the job at hand, but to be aware of the hazards of the job and how to respond to a variety of hazard situations.

3. Daily meetings are held to discuss all phases of operations. Operations involving fluorine are designed to contain it to a level below the odor threshold.

4. All IES personnel are trained to work with the Health Physics (HP) technician. When it comes to radiological concerns, IES recognizes that the HP is the first line of information and instruction.

5 IES has developed a set of procedures for all aspects of cylinder management. All IES personnel know these procedures must be followed at all times.

6. Each IES employee irrespective of title or seniority maintains stop work authority.

The following sections discuss each of the above points.

Quality Assurance System

Safety and protection of the environment does not start in the field, but in the office. The implementation of a quality assurance system that deals with all aspects of the business helps to assure that activities, once they reach the field, proceed smoothly. IES believes that management is responsible for providing employees the resources and training that

allows them to accomplish their tasks with a high degree of quality.

Performing quality work and implementing a quality assurance program can be achieved only through a cooperative effort and commitment to quality by all IES personnel. IES employees understand their responsibility is to comply with applicable procedures and use the lines of communication to make suggestions for improvement. IES management welcomes and encourages its employees to make beneficial suggestions that could lead to program enhancements and reduce cost.

The elements of the IES plan are as follows:

Organization

The organization supports the scope and technical needs by assigning responsibility to various levels of the organization for their job/contract specific needs. The organization's functional responsibilities for cylinder management are presented below:

President:

1. Overall project execution;
2. Interface with technical, safety, and administrative personnel;
3. Review accident and injury prevention measures for use during the project;
4. Enforcement of safety protocols on a corporate level throughout the contract;
5. Ensure implementation of accident prevention plan;
6. Oversee safety training of all on-site personnel;
7. Develop, supervise, and execute air monitoring activities;
8. Establish applicable action limits for various work activities; and
9. Establish levels of protection.

Vice President:

1. Assist president in execution of duties;
2. Act has Project Director when so designated;
3. Address regulatory concerns; and
4. Act as Quality Representative.

Site Manager:

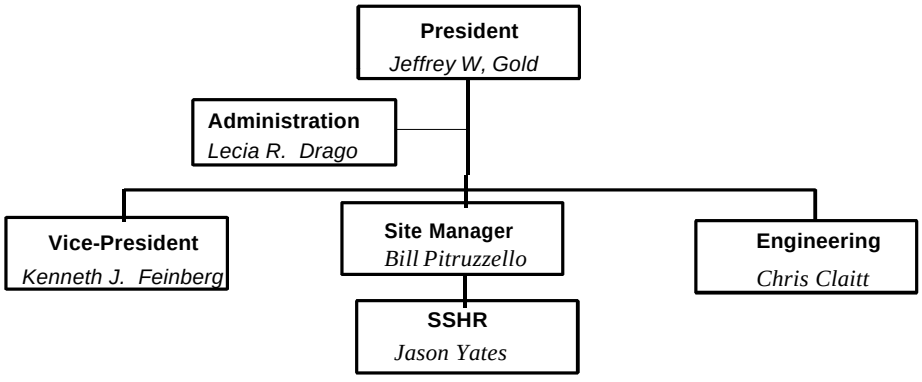
1. Establishing a safe and efficient site layout;
2. Executing site operations according to plans, procedures, and scope of work;
3. Acting as IES on-site representative and primary interface with UT Battelle personnel;
4. Ensuring operations personnel have proper tools and equipment for assigned jobs;
5. Proper management of all waste materials generated during the project;
6. Day to day inspections at the site;
7. Coordination of equipment and supply deliveries;
8. Maintenance of project plans and records;
9. Recording of non-conformities and corrective actions applied;
10. Ensuring communication of plans and procedures among all project participants: and

11. Planning of tests and trials.

Environment, Safety, and Health Site Representative:

1. Responsible for the implementation of the ES&H program that is in compliance with client ISMS, OSHA regulations, and site DOE requirements;
2. Responsible for integrating safety management practices within the organization, including integrating safety practices with any subcontractors performing work on the company site or supporting company projects;
3. Responsible for the development and implementation of the ES&H procedures and programs in support of operations;
4. Be familiar with operations and operating processes and identify unsafe conditions;
5. Responsible for working with ES&H and operations staff;
6. Provides oversight and support for the investigation of workplace accidents, incidents, and injuries and preparation of written reports;
7. Identifying imminent danger and taking appropriate corrective actions;
8. Must have a complete understanding of record keeping requirements for ES&H;
9. Responsible for keeping appropriate ES&H records and reports as required by company, clients, federal and state agencies, and DOE;
10. Responsible for the classification of injuries and illnesses as required by OSHA and DOE;
11. Responsible for promoting employee awareness of ES&H;
12. Responsible for the validation of requirements and modification of procedures;
13. Responsible for approval of all safety-related facility authorization basis documents, procedures, and equipment test/maintenance requirements related to safety; and,
14. Responsible for the interfaces with radiological protection, facility surveillance, nuclear criticality safety, and industrial hygiene, to ensure safe operations.

The IES organizational chart is presented below:



Quality System

The IES quality system is described and maintained in this quality assurance manual (QAM). The QAM is comprised of the quality policy and objectives of the company, the organizational structure, a description of the elements of the quality system, references to documented quality system procedures, and project specific quality assurance plans (PQAP).

Contracts and Procurement

IES has reviewed the procurement documents and signed the contract for the disposition of compressed gas cylinders. IES is knowledgeable of the deliverables which include supplying all labor and resources necessary for the performance of the project. IES acknowledges the operational parameter of performing the required tasks while protecting the human and natural environment.

Procurement of items affecting the desired results as stated above will be controlled to assure that the items meet the performance standards.

Document Control

IES will maintain a document control system to ensure that preparation, issue, or changes of documents affecting quality are controlled. For the purposes of the BOA, all procedures and plans have a revision number on the cover page. Once a particular plan or procedure is approve by both UT Battelle and IES, a latest revision number will be assigned. A table of plans and procedures showing the latest revision number will be developed and maintained at both IES corporate offices and in the field.

Design Control

IES will not be providing any equipment designs for this project. All the equipment used for this project has been previously employed for the processing of compressed gas cylinders.

Item Identification and Control

For the purposes of this project, item identification will be limited to new parts required to replace existing parts.

Process Control

Processes affecting quality will be controlled through the use of procedures developed by IES and checked by UT Battelle. The IES crew will follow these procedures. When, and if a change is required, then IES will follow the procedure for making a change.

Inspection and Testing

Equipment that is vital to the health and safety of IES personnel is inspected and tested before each reuse.

Control of Measuring and Test Equipment

IES QA requires that measuring and test equipment (M&TE) be calibrated as required by

industry standards or the manufacturer requirements and/or recommendations. IES routinely returns equipment to the manufacturer for re-calibration. However, some measuring devices are tested against known standards, such as the percentage of oxygen in air, and these test are sufficient to confirm calibration.

Inspection and Test Status

Monitoring equipment is identified by inventory number. This number is keyed to the inspection scheduled that indicates whether or not items are within inspection and test limits.

Handling, Storage and Shipping

Storage, handling and shipping of items affecting quality will be controlled to prevent damage or loss and minimize deterioration. As it applies to this project, each monitoring device is transported in an individual case. Other equipment effecting quality on the project include the various air scrubbers and cylinder management devices. While this equipment is relatively sturdy, attention will be giving to packing to ensure no damage occurs during transport.

Control of Non-Conforming Items

Non-conforming items will be controlled to prevent inadvertent use or installation. Non-conforming items will be tagged and segregated when practical.

Audits

IES routinely conducts internal audits of the QA plan. Should anything factor impacting upon Quality Assurance Plan be identified**,** then the plan will be evaluated accordingly.

Corrective Action

Conditions adverse to quality will be identified and corrected as soon as practical. Significant conditions adverse to quality will be investigated to determine root cause and the corrective action to prevent recurrence.

Training

Training is the key to hazard mitigation. All personnel involved in the cylinder workt will have both OSHA and DOE training. IES will provide supplemental training as required.

The following subsections describe various training programs.

40-Hour Training

All personnel working on involved in cylinder management will undergo safety training in accordance with requirements set forth in 29 CFR 1910.120. This training involves a minimum of 40 hours of formal classroom and hands-on training offering a full range of topics related to safety while working on hazardous waste sites. In addition, each employee augments the 40-hour training with a minimum of 24 hours of actual field experience working under the supervision of a qualified supervisor.[1]

IES tracks employee training and an 8 hour refresher course is provided annually as each 40 hour certification expires.

Site Specific Training

In addition to the 40-hour safety training required by Federal law, each employee with work responsibilities that may expose him to risk, or require an emergency response, will be given site-specific safety training. The purpose of this training is to familiarize personnel with the hazards specific to the job and provide instruction in safety procedures to adequately address them. Topics of interest on this project include:

- hazards of compressed gas cylinders
- hazards of the reagent
- reaction hazards
- emergency responses
- waste management

Each of these topics is addressed prior to job initiation.

Facility Specific Training

Facility Specific Training is required for all workers at any DOE site. Such training usually provides the very basics for understanding radiological hazards. Each IES employee will have facility training as required.

Radiological Worker II

To further mitigate concerns about radiological hazards and the spread of contamination, all IES personnel have successfully completed Radiological Worker II training provided by an approved training company. Each worker is required to pass both the academic and practical tests associated with the training.

Daily Meetings

A daily meeting will be held prior to the start of each day's activities to review safety-related and other pertinent information, such as to how to manage unique situations Facility personnel and UT Battelle personnel are invited to attend the daily meeting.

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[1] "Qualified" person means one who can identify existing and predictable hazards in the working environment which are dangerous to personnel and has the authority to promptly eliminate them. This person is one who, by degree, certificate, professional standing, or extensive knowledge, training and experience has demonstrated his/her ability to resolve problems related to the work.

Working with the HP

All IES technicians are instructed that in matters involving radioactive materials, the HP's instructions are to be heeded.

Adherence to Procedures

All employees are familiar with the procedures and are directed to follow them. When a procedure is not applicable, employees are instructed to follow the procedure for making changes in the field.

Stop Work Authority

All IES personnel may require work be halted. This is true for any level of seniority or any job title.